

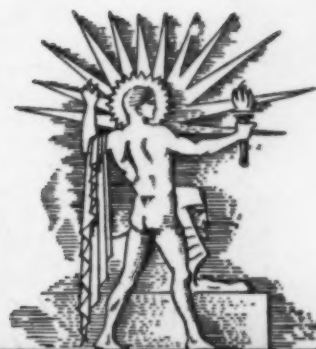
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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



August 7, 1937

Royal Treasure

See Page 85

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The Weekly



Summary of

Current Science

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DO YOU KNOW?

A Swiss scientist has patented a way of de-nicotinizing tobacco.

Seventy-one women are among the research workers in the Soviet Arctic.

Bibles for natives in the tropics are being bound in waterproof and insect-proof fabric.

The only water bird of North America whose nest has never been found is Ross's snow goose.

Egyptian laborers working on royal tombs staged a sit-down strike in 1179 B. C., when their wages were overdue.

A school where man, woman, or child pupils may learn to build model airplanes and other models has been opened at New York's Museum of Science and Industry.

Egyptian sculptors did not first model a work in clay and then make it of stone; instead, they drew outlines on the four sides of a stone block and then cut into the block by these guide lines.

Air acetylene torches can be used in burning nests of tent caterpillars.

Some glass fibers have a strength of about 2,000,000 pounds per square inch.

The steel industry in the United States alone spends more than \$9,000,000 a year on research.

The iodine industry foresees a five-fold increase in use of this product, if it gains as wide medicinal use for animals as for man.

A Swedish professor of medicine has devised a special stairway on which patients walk at measured rates to test reserve power of the heart.

A new tree-moving crane is capable of handling a tree 45 feet in diameter, and weighing with its ball of earth on roots about 18,000 pounds.

The Sansevieria, one of the most common house plants, is variously known as the snake plant, leopard lily, mother-in-law's-tongue, and bowstring hemp.

WITH THE SCIENCES THIS WEEK

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ZOOLOGY

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POPULATION

War May Save China From Evils of Overpopulation

There, At Least, Malthusian Checks Are Truly At Work With Grim Reality, Population Expert Says

A WAR in China might be China's salvation, Dr. Frank W. Notestein, American student of population from Princeton University, told the International Congress on Population meeting in Paris. China is growing so fast that if violence does not check her numbers, the population will probably double in less than 65 years.

"China cannot stand such growth," said Dr. Notestein. "If it is not stopped by war and other violence, it will be by famine and disease. Here, at least, the Malthusian checks are a grim reality."

China, known to the world as a nation of antiquity, is today a nation of youth, Dr. Notestein said.

Old age is venerated in the Oriental countries, but men and women do not live to grow old there as they do in other parts of the world. In New Zealand, half the population live to reach the biblical standard of lifetime—three score years and ten. In China half of those coming into the world die before they reach the age of 28 years.

In the United States, 90 of each hundred babies born live to celebrate their tenth birthdays. In China, 40 per cent. die before they reach the age of 10. An American baby coming into the world may be expected to live to the age of 59 to 63. But the Chinese infant can hope only for a life of 35 years.

Yet despite this terrific mortality in childhood and early youth, China's peoples are not being wiped out. No one knows just how many people live in that vast nation. Various estimates of the total population range from about 350 million to more than 550 million, Dr. Notestein told the Congress. Of these uncounted hundreds of millions, probably about 80 to 85 per cent. live in rural regions.

Early Marriage

Marriage comes early with the Chinese. The family is as large as the farm can support.

"Virtually every one marries as soon as possible," said Dr. Notestein. "After age 30, the bachelor is rare and the

spinster virtually non-existent. Monogamy is the rule."

The average bride in China is a girl of 18, her groom is only 20. Contrast this with the average in New York State where the bride is 25 and the groom 29.

At the time of the first marriage, the age is still lower. More than half the boys taking their first wives are under 20 and in North China 12 per cent. are under 15. Of the brides on their first trip into matrimony, practically all (98 per cent.) are under 25, 81 per cent. under 20 and in North China 13 per cent. are under 15 years.

Much ado has been made lately in the United States over child marriages, yet in New York State, outside of New York City, marriages under 20 years of age constitute only 3 out of each hundred males as against the 54 per cent. in China, and only 30 per cent. of brides as against 81 per cent. in China.

Birth Rates High

Birth rates in China where practically everybody is married are just about double what they are in the United States, 38.3 per 1,000 population as against 18.9 in the United States. The rate is also higher when computed on the basis of the number of married women of child-bearing age; 131 per 1,000 in the United States against 207 in China.

This picture of birth and death in China is an optimistic one, Dr. Notestein warned, because of the fact that the time selected for the survey on which these figures are based was not one of those periods of famine, flood or scourge which are ever-recurrent in China.

"If, by some magic, it suddenly became possible to eliminate the mortality from 'preventable causes' of death, sober students might ponder long before utilizing that power," said Dr. Notestein.

"Observers are unanimous in the belief that the population of China is already redundant and that, with existing productive capacities, a large increase in the population can only take place at the expense of a serious decline in the

standard of living which is already pitifully low Hunger would accomplish what disease was prevented from doing. It is perhaps fortunate that any improvement in mortality rates will, if it comes, come gradually, and may be accompanied by a corresponding decline in fertility."

The survey reported by Dr. Notestein was conducted with the cooperation of the Milbank Memorial fund in connection with the China Land Utilization Study under the direction of the University of Nanking's Prof. John Lossing Buck.

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ASTRONOMY—PHOTOGRAPHY

"Tears of St. Lawrence" Can Be Photographed

CAMERA enthusiasts seeking new subjects may find one in August when the "tears of St. Lawrence" make their annual appearance, under particularly good circumstances. The "tears"



FINSLER COMET

This photograph was taken with the 40-inch reflecting telescope of the U. S. Naval Observatory on July 23 at 3:45 a. m. The short bright streaks are stars, appearing so because of their movement across the field as the instrument was kept trained on the comet. The longer trail is made by a meteor which happened to streak across the sky during the 20-minute exposure.

are the meteors, commonly called "shooting stars," which appear during most of the month of August, but particularly about the night of August 11.

An average of a dozen or so meteors can be seen hourly on any dark, clear night during the latter half of the year. More are seen after midnight than before. This is because the meteors, small bits of cosmic dust, generally no larger than grains of sand, are moving through space more or less at random. After midnight we are on the advancing side of the earth, and meet those coming toward us head-on, as well as overtaking the slower moving ones. But in the evening hours, when we are on the receding side of the earth, only those moving more rapidly, and in our direction, catch up.

On the night of August 11, if one watches the northeastern sky, one or more a minute will probably be seen. And instead of flitting across the sky in all directions, these will seem to radiate from one particular place, the constellation of Perseus. The August meteors are therefore called the "Perseids." Actually this is an illusion, the same one that makes the tracks of a railroad converge in the distance, for the meteors are moving in parallel paths around the sun in a great elliptical orbit. Every August the earth crosses this orbit, and the meteors are seen in profusion. As they follow the same path as Tuttle's comet, last seen in 1862, they are believed to be the comet's debris.

In many years the moon is nearly full about August 11, and its glare hides the fainter perseids. This month on the best date it is several days before the first quarter, so it sets before midnight, and the early morning sky is quite dark.

For meteor photography a fast lens is essential. It should be of F. 6.3 or better, and fast films should also be used. Low in the northeast, soon after midnight, the brilliant star Capella will appear, and Perseus is the constellation just above and to the right. Place the camera on a tripod, or some film support, and point it to this region. Then open the shutter, and give a long exposure of 15 minutes, or even longer. During this time the turning of the earth makes the stars move, so they will photograph as parallel streaks, but the meteors will be moving in other directions, and they can easily be distinguished. When other exposures are given the camera's position can be changed, so as to keep it pointed to the same region of the sky. If one has another fast camera, it might also be used, pointing it to

the part of the sky above, or to the side, of that included in the first.

Such photographs may have some value to astronomers. The time of each exposure should be noted, and this information, together with the original films, which are better for the purpose than prints, sent to Dr. Charles P.

Olivier, of the University of Pennsylvania, at the Flower Observatory, Upper Darby, Pa. In Canada they may be sent to Dr. Peter M. Millman, Dunlap Observatory, Richmond Hill, Ontario. They will also be glad to know the number of meteors seen during half hourly periods.

Science News Letter, August 7, 1937

PUBLIC HEALTH

Head of Public Health Service Urges War Against Syphilis

IN a fighting declaration of renewed warfare against the great but preventable plague of syphilis, Surgeon General Thomas H. Parran of the U. S. Public Health Service, in a new book, "Shadow on the Land" (Reynal and Hitchcock), calls upon physicians and laymen alike to insist upon putting into effect a platform of action:

1. Locate syphilis.
2. Obtain public funds which assure adequate treatment of all infected persons.
3. Educate the private physician and the general public.

This disease affects one out of every ten adults of the nation. It is a hundred times more prevalent than infantile paralysis and twice as common as tuberculosis. Dr. Parran calls it the greatest public health problem.

Giving figures and naming cities and persons, Dr. Parran discusses official action being taken to combat syphilis.

Chicago and St. Louis are not rated highly in their handling of clinics, although Dr. Parran praises the control program of Chicago now getting under way. In Houston, Dr. Parran quotes a local opinion that dairy cattle are given better care than syphilis patients. But Dallas, with newspapers leading, has developed an excellent clinic and control program. New York has done more than any other city in the past two years. Washington, D. C. has a "distressing" record in health protection and Dr. Parran lays the blame largely on lack of financial support from Congress.

Wiping out congenital syphilis is the first thing to do completely, Dr. Parran writes. This is a job that will not require a generation. With good treatment begun before the fifth month of pregnancy there is only one chance in eleven that the syphilitic mother will not bear a healthy child.

Prostitution is condemned by Dr. Parran as one of the major methods of spreading syphilis and he calls it "the single greatest social handicap to complete eradication of America's No. 1 killer." Fear of disease alone will not control syphilis, he observes, and ideally, we should teach our boys and girls to prefer sex morality.

Praises Newspapers

Dr. Parran acknowledges the cooperation of the press in bringing the syphilis problem to the attention of the American people. He also urged further reporting of the conditions in particular cities.

"During the past year a great number of American newspapers and magazines honestly have tried to be helpful in the program to educate people about the facts of syphilis control," Dr. Parran writes. "Some of the best feature writers in the country have been doing articles for their papers about how Columbus brought syphilis to Europe in 1493 and Wassermann devised a blood test to find it in 1907. They give a few national figures on prevalence and sometimes they review what Scandinavia and Great Britain have done. That's all.

"And that's fine! Everybody needs to know a little about the background of this problem. I've tried to sketch a few of those essential facts in preceding chapters. But we need spotlights as well as background for the great contemporary tragedy. The news story begins where these stories stop. I should like to see some of the crack reporters get down to brass tacks regarding how much syphilis we actually have, month by month and year by year in these states and cities. Where does it come from? How much of it is stopped at the source? Are all cases treated? Is treatment good? Is it considerate? If not, who's responsible?"

Science News Letter, August 7, 1937



IVORY COMB

With its delicate carvings, this ornament was a part of the treasure buried in ancient Palestine.

ARCHAEOLOGY

Ancient Palestine Treasure Comes to Oriental Institute

At Armageddon Is Found the Cache of a Prince Who Buried His Wealth in 1350 B.C. Never To Recover It

See Front Cover

AN archaeological treasure in gold and ivory has arrived safely in Chicago, it was announced by Dr. John A. Wilson, director of the Oriental Institute of the University of Chicago. The treasure, from Megiddo (Armageddon) in western Palestine, was discovered during last season's digging and a brief announcement made last March, by cable.

The discoveries will have an important place in disclosing new knowledge of historic Palestine during the troubled years from 1500 to 1200 B. C., when the land was a loosely joined group of "city" states under the nominal leadership of Egypt.

Gordon Loud, field director of the Institute's expedition, who has just returned from Palestine, related the details of the discovery.

"A magnificent palace," he said, "with frescoed walls and floors of sea shell mosaic stood just within the city gate

and dominated the ramp approach to this fortress city. Within this palace lived princes of Megiddo who ruled this small section of the Egyptian Empire from about 1500 to 1200 B. C.

"These were troublous times, and the course of empire was not smooth. The city was constantly threatened with invasion by those who wished to throw off the yoke of Egyptian suzerainty. This threat sometimes became a reality, as is evidenced not only by historical records but by the excavation of five periods during which the palace emerged from partial destruction, each time with a slightly different plan.

"While we were engaged in clearing the floor which served the second phase of the palace we noticed that the lime pavement in the corner of a comparatively inaccessible room had been replaced with tamped earth. Exploring spades exposed a gleam of gold, and then patient and painstaking work with knife

and brush uncovered the entire cache of gold and jewelry under the floor.

"About 1350 B. C. a threatened invasion had caused the prince to bury his valued treasure, hoping it might escape the general looting which inevitably accompanied invasion. His hopes of safety for the gold were fulfilled, but he apparently never lived to reclaim his possessions."

The 250 pieces of carved ivory will probably prove of more scholarly interest to scientists than the beautiful gold ornaments. Some bear hieroglyphic markings which should permit them to be dated by specialists. The first task on these ivory carvings will be to treat them to insure preservation. This will be done before they are made available for study and exhibition.

The discoveries climax 13 years of exploration at the Armageddon site, famous battle site of ancient nations. Previous discoveries include the stables of the blooded horses bred by Solomon for distribution in the east, and an ancient water system.

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METALLURGY

U. S. Not Self-Contained In Tin, Nickel and Platinum

FROM the rocks of the earth come many substances that are essential to our daily life. These differ from the crops of the fields and the timber of the forest in not being renewable. The sun's energy can not produce them and seeds can not be taken from one nation to another and planted to produce tin or oil or manganese.

Those minerals that a nation needs but does not have come to be known as "strategic minerals" during the World War. Rising nationalisms in recent years have accentuated their importance.

For the United States, which is far better off in mineral supplies than most nations, Dr. T. T. Read of Columbia University lists the following: Manganese, essential for making open-hearth steel. Tin, for food containers and bearings. Mercury for detonators. Tungsten for high-speed tool steels and electric lamp filaments. Chrome ore for tanning, chemical manufacture, refractories, and metallurgy. Graphite for crucibles. Mica for insulators. Platinum for chemical industry. Asbestos for heat-resisting uses. Nickel for alloy steels and plating.

Tin, nickel and platinum are three materials that apparently can not be produced in this country. A few years ago

potash would have been in this list and there would have been much worry over the fact that Germany had a monopoly. But discovery of large high-grade deposits in New Mexico has practically guaranteed our self-sufficiency.

Other minerals, like graphite of the "chip" and "flake" varieties, this country lacks in those particular forms, while others, like chromium ores and manganese, do not measure up in metallic content or freedom from impurities.

If America could not get tungsten for its incandescent lamps our electric light bills would be a million dollars higher daily, yet the tungsten used in lamps in a year is worth only about \$200,000.

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BIOLOGY

Neutrons Are More Potent Than X-Rays For Sterility

IN experiments that involved sending a dozen albino mice by air express from Bar Harbor, Maine, to San Francisco and back again, it was demonstrated that neutron rays are five to six times as effective as X-rays in producing sterility in the male.

Dr. Paul C. Aebersold of the University of California Medical School, exposed the mice to streams of neutrons in the famous Lawrence neutron producing machine, while Dr. George D. Snell of the Roscoe N. Jackson Memorial Laboratory at Bar Harbor furnished the mice and conducted the biological experiments. (*Proceedings of the National Academy of Sciences July.*)

This superior effectiveness of the neutron, atomic particle discovered in 1932, checks with experiments that show neutron radiation to be similarly more potent when directed at cancer cells.

Further experiments are expected to throw new light on the size and structure of the genes, the minute elements within the germ cells that determine hereditary traits.

The sterile period produced by the irradiation treatment extended from three to 12 weeks after the raying.

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To study how roots of fruit trees grow in the soil, a British scientist has designed observation trenches fitted with plate glass windows.

Finding a scrap of a glass bowl made about 2000 B. C., a Swedish archaeologist reports that glass was made in Egypt five centuries earlier than supposed.

ANTHROPOLOGY

Uncle Sam Hunts America's First Human Inhabitants

W.P.A. Workers Dig on the Abbott Farm, New Jersey, To Settle Issues of Famous Scientific Battle

UNCLE SAM is joining in the hunt for the most elusive people in America—our Ice Age inhabitants, if any.

Scene of the hunt is a farm near Trenton, N. J. Works Progress Administration workers, directed by well-known archaeologists, Dr. Dorothy Cross and Dr. Eugene Golomshtok, are digging for evidence there, where the last ice sheet left its debris of gravel when it melted back toward the northland.

Were there—or weren't there—human beings already roaming America in those days, when the Ice Age ended? That is the most fought-over question in American science. If the answer is yes, then America has been inhabited at least 15,000 years.

Naturally, a country wants to know who its first inhabitants were, how long

ago they arrived. But for America this has proved a baffling, long-drawn-out mystery.

Abbott Farm, scene of the WPA glacial-man hunt, has been famous in American science for over 60 years. As long ago as that, Dr. C. C. Abbott announced finding clumsy stone blades when he dug through black earth into a layer of yellow loam on his land. People who made the rude tools, he asserted, were older and more primitive than the well-known Delaware Indians who were in New Jersey when white men arrived.

In fact, Dr. Abbott was bold enough to suggest that these stone tools came to rest in the loam just above the glacial gravel in the very days when the glacier retreated.

That bombshell of an idea launched



PARTIAL BURIAL

Head-and-leg burials reveal a mysterious custom of New Jersey aborigines. Dr. Eugene Golomshtok removes one of these, wondering whether these Indians were cannibals or headhunters, or whether they merely felt that heads and legs were enough for a spirit existence.



OLD AMERICAN CUSTOM

Women smoked pipes, not cigarets, in Indian days in New Jersey. This Indian woman was buried with her pipe in her left hand, centuries ago.

the scientific Battle of Trenton, in 1872, that is still going on.

In the course of years, there have been archaeologists who went to Abbott Farm and dug on comparatively small scale, just to see what they could learn. But they never found satisfying evidence to prove to their fellow prehistorians whether the stone blades were very ancient, or merely the handiwork of known Indian tribes.

In hope of getting somewhere with this argument, the WPA corps of workers is attacking systematically a field in Abbott Farm. They are using the latest approved technique of archaeological digging. That means squaring off the field by surveying methods, so that each small five-foot section of the site can be mapped, and anything found in it can be charted to show its exact resting place. To sample the possibilities of the field, trial trenches have been dug through the ground, and where pay dirt in the form of antiquities is struck, there more intensive digging can be done.

Record Made

Each object recovered is at once given a number, and its description and circumstances of finding are recorded. Modern archaeology is more eagerly concerned with the story that an old object tells, than with finding relics for exhibit.

So far, the field has not yielded any secrets of glacial man's presence. Thousands of objects, however, belonging to later inhabitants—Indians of the Delaware or other Algonquian tribes—have been coming to light.

The farm overlooking the Delaware

River seems to have been a favored place with woodland Indians of the region, Dr. Cross explains. When she and her associates sort out stone and clay relics they identify with practised eye such things as these:

1. Numerous arrow and spear heads used by Indian hunters.
2. Sinew stones, used to make animal gut pliable; and stone knives of half-moon shape, used for scraping hides and chopping meat.
3. Innumerable net sinkers, usually notched pebbles, which show how busily the Indians fished.

Farming People

4. Hoes, mortars, and pestles in surprising quantity. These prove that the natives in this woodland put in far more time farming than anyone supposed.

5. Axes, celts, and gouges. These show that felling trees and wood working were everyday occupations. The Indians, judging by Delawares of historic time, built homes of sapling frame with bark covering.

6. Anvils, where arrow makers shaped the stone points for war and hunting.

7. A variety of ornaments such as beads, pennants, and bannerstones. The last-named curious stone objects have long puzzled archaeologists, who find them widely in Indian excavations. They can only wonder whether "bannerstones" were really attached to ceremonial staffs like banners, or whether they were spindles, bow-drills, or ornaments for neck or hair.

8. Big clay storage pots, which the Indians buried level with the house floor.

These took the place of grain bins and cupboards.

Strange burial customs were followed by Indians who lived at the site. The nine skeletons that have come to light consist of skull and leg bones or skull alone. Were these Indians head-hunters? Cannibals? Or did they have a way of carrying the most important bones, the head and legs, of the deceased back to his native village for burial?

"If we can ascertain the reason for this strange proceeding," says Dr. Cross, "it will be one of the greatest scientific contributions we have made and incidentally it will throw some much-needed light on the burial customs of the local Indians."

Woman With Pipe

A sidelight on women's smoking customs in aboriginal America is revealed by a skeleton of an Indian woman who was buried with her pipe in her left hand. This burial, found by WPA excavators on a New Jersey farm farther south than Abbott Farm, was photographed from various angles for record purposes, before the bones were removed. To move the fragile skull, they first covered it with earth and newspaper layers, and then made an outer cover of burlap soaked in plaster. When the plaster set, the complete rough cast was scooped out with some earth beneath it, and removed to an office where it could be handled more safely.

Besides exploring Abbott Farm and other Indian settlement sites, WPA workers are delving in libraries and museums of the state to recover forgotten facts about New Jersey in Indian days.

Under Dr. Cross' direction a state-wide survey of Indian sites is being made. Private collections of Indian relics throughout the state are also being inventoried. Over 65,000 such relics have already been listed, and unusual objects have been described in detail and drawn or photographed. The records all go to the State Museum at Trenton, there to be used when future discoveries call for a check-up on the known relics of Jersey Indians. See page 92 for another illustration.

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In 1935 there were 400 trailers produced; last year this new industry turned out 10,000.

Heat may kill more trees than lack of moisture in hot drought seasons, it is learned from a study on forest plantations.

SEISMOLOGY

World-Shaking Earthquakes Number Six During July

JULY'S sixth earthquake of world-shaking proportions, recorded on July 26, was located in Japan, probably north-east of Tokyo.

Through seismological reports to Science Service from observatories of the U. S. Coast and Geodetic Survey at Ukiah and Honolulu, the Dominion Meteorological Observatory at Victoria, B. C. and Fordham University, the experts at the Coast and Geodetic Survey determined the shock's location.

July's unusually active period of earthquakes began with two oceanic shocks on July 1. Another quake occurred off the Mexican coast on July 11, the region of Fairbanks, Alaska, was shaken July 22, while Mexico was the scene of a quake on July 25.

(Time of quake: Eastern Standard Time: Monday, July 26, 2:56.6 p. m. Japanese Time: Tuesday, July 27, 4:56.6 a. m. Provisional location: 39N 141E.)

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METEOROLOGY

Weather Men Challenged To Explain When Wrong

"WRONG again. What's your alibi this time?"

That's what weather men are likely to hear from inquiring local reporters, if general adoption meets a suggestion in the quarterly, *Thought*, made by H. D. Grant, himself a meteorologist of long experience in the service of the British Navy. Mr. Grant thinks forecasters ought to come out and tell why, when they "guess wrong."

"Nothing is more exasperating," he says, "than to read the Government weather forecast of 'fair and warmer' and be caught in a cold rainstorm a few hours later—or to put on rubbers, raincoat and take along the umbrella to the office, and by noontime find it bright, warm and sunshiny."

(It all sounds very, very London, doesn't it?)

"When a forecast has gone very far wrong," continues Mr. Grant, "the Weather Bureau, in its next forecast, would do well to explain why. Such an explanation would be of great interest to many and would be of considerable educational value. Moreover, it would teach the public something of the difficulties the forecaster has to contend with, and make them more lenient when official forecasts are unsuccessful."

Thus we see that there is something more in it than just the British instinct to do the sporting thing.

The idea might very well be extended, and the Weather Bureau invited to explain why they were right as well as why they were wrong. It looks like a sure-fire possibility for a good local daily feature for newspapers—for it would have to be done particularly for each city; conditions and forecasts are so different from place to place over a big country like ours. But the local weather man could tell an intelligent reporter his daily success story (or alibi) in no more time than it would take to sip a glass of cooling beverage.

Science News Letter, August 7, 1937

MEDICINE

New Drug Saves Life and Limb From Gas Gangrene

PRESENT pet of the physician is sulfanilamide, or prontosil, a new drug. A recent discovery about sulfanilamide is that it has dramatic value in saving life and limb in cases of gas gangrene.

The amazing results of the use of this drug in a desperate case of gas gangrene following a compound fracture are related by Dr. Harold R. Bohlman of Johns Hopkins Medical School (*Journal, American Medical Association*, July 24.)

Two other cases, less desperate than the first, confirm the speedy and satisfactory results that follow the use of the drug after severe and crushing injuries in which infection with gas bacilli has occurred.

"Sensible, conservative surgical principles should be combined with the use of sulfanilamide," declares Dr. Bohlman.

During the war about half of the amputations in a certain base hospital were for gas gangrene, Dr. Bohlman states.

Nowadays automobile accidents produce so many fractured limbs that this new drug has tremendous life-saving possibilities.

Science News Letter, August 7, 1937

METEOROLOGY

Hawaii Has Small Chance For Having a Big Wind

HAWAII can go California one better when it comes to weather-bragging. Storm probabilities calculated by meteorologists of the U. S. Weather Bureau indicate that the chances for a 64-mile gale are less than 1 in 100, while a hurricane can be expected "practically never."

Science News Letter, August 7, 1937

IN SCIENCE

GENERAL SCIENCE

Children Do Research With Professional Methods

THOUSANDS of boys and girls throughout the land are doing scientific research as a serious hobby, working with the enthusiasm and methods of professional scientists, Dr. Gerald Wendt, director of the American Institute of the City of New York, revealed in a Science Service radio talk over the Columbia Broadcasting System.

One science club in a New York School tacked over its little club room the sign: "Life begins at 3:45," the hour when school is dismissed.

Dr. Wendt told of Francine who experimented with the effect of coffee, alcohol, aspirin and strychnine on the action of a frog's muscles, Joyce, who persuaded her father and mother to give her drops of their blood several times a day so that she could study the effect of fatigue, meals and excitement on the composition of the blood, and Eugene, who made a practical stroboscope out of such wood, metal and glass as he could pick up.

"The children do their experiments," Dr. Wendt said, "just because the quest is fascinating, not because there is profit in it, not because it is a fad that everyone is talking about, not because they were told to do it or told how to do it, but just because at that moment their entire spirit is fired with the divine urge to discover and to create. It is perfectly obvious that these boys and girls will meet life on its own terms. When they finish school they will use their hands, their intelligence, and their enthusiasm to create what their spirit has seen."

"Whatever our sphere in life, whatever the technique of our particular job, it is this creative power that reveals the human race at its best, and, incidentally, gives the greatest satisfactions in life."

The American Institute, which traces its history back over a hundred years, is sponsoring the development of the amateur science clubs for New York's boys and girls.

Science News Letter, August 7, 1937

NE FIELDS

PALEOBOTANY

Water-Lily Pollen Found In a Scotch Coal Seam

FOSSIL grains of water-lily pollen have been found abundantly in a Scottish coal seam, along with pollen of trees of the spruce family and some of magnolias, by John B. Simpson of the Geological Survey Office in Edinburgh. The coal is of Jurassic age, that is, it was formed during the earlier part of the days of the dinosaurs.

Science News Letter, August 7, 1937

MENTAL HYGIENE

Moodiness Seen As Preventive of Boredom

MOODINESS may not seem a desirable trait, but within limits it has its value. Among other things, it keeps us from being bored and from being bores.

The person who runs along on an even keel, temperamentally, may be easy to live with but he is apt to be unsympathetic and uninteresting. If you have had a good case of the blues yourself, you can be more tolerant of another's mood of depression, and if you occasionally get very high yourself, you are not so irritated by an overly gay person.

The value for personality development of changes in mood was recently stressed by Dr. Conrad S. Sommer, medical director of the Illinois Society for Mental Hygiene. Dr. Sommer also pointed out that persons who experience mild changes in mood are better able to understand and enjoy a range of moods not only in other people but in music, literature, clothes, the weather and all of life.

A depressed mood is further valuable as a warning of fatigue or strain. It should be properly interpreted, however, and an effort made to relieve the depression by relieving the strain, not by resorting to stimulants. The latter can have only a temporarily elevating effect and may leave you worse off than before.

To be happily in love, Dr. Sommer says, is one of the best cures for moodiness. This is not merely a humorous

quip. Ambition, he believes, is causing many people to make unwise sacrifices of romantic happiness. A balance between work, love and recreation steadies the mood, conserves energy and strength, and leads to serenity.

Serious depression and exhaustion need medical attention. They may be due to unconscious effort to bury and forget past unhappy experiences. Psychiatrists believe it is better to bring these painful memories out into the open and learn to understand them.

Science News Letter, August 7, 1937

METALLURGY

15 Research Fellowships To Aid Study of Silver

FIFTEEN research fellowships have been designated in nine of America's leading colleges and universities to study new uses for silver, it is announced by Dr. Lyman J. Briggs, director of the National Bureau of Standards.

The fellowship system attempts to bring a number of minds, expert in individual specialties, to bear on the various angles of a major problem and at the same time bridge the gap between the universities and industry.

The silver fellowship system will center in the National Bureau of Standards where three men have been assigned to physical and metallurgical problems. This center also will provide a clearing house for information and research progress reported by the 15 research fellows.

Backers of the project are the principal silver interests of the nation. The new fellowships are based on the encouraging leads supplied in a preliminary survey during the last few years, which disclosed unexploited uses, and hints for uses, of the precious metal.

Many fields of endeavor will be covered by the fellowships. Four fellows will work at the University of Pennsylvania, two in medicine and two in chemistry. Cornell will have one fellow working on agricultural applications of silver. One at Lehigh will study the physical chemistry phases of the problem. Another at Columbia will investigate corrosion prevention. Two at Indiana will study the electrochemical problems. For applications of silver to metallurgy and electrical engineering Massachusetts Institute of Technology and Rensselaer Polytechnic Institute have been chosen as the scenes of research, while mechanical engineering uses will be studied at Battelle Memorial Institute.

Science News Letter, August 7, 1937

PSYCHOLOGY

Medium May Be Continuing Childish Imaginary Friend

THOSE mediums who are not frauds, but genuinely believe that they hear the voices of spirits, may be the victims of imaginary companions, Dr. Philip L. Harriman, of Bucknell University, suggests. (*American Journal of Orthopsychiatry*, July).

About a third of the children between three and eight or nine years of age enjoy the company of such imaginary companions, excellent descriptions of which appear in the novel "Anthony Adverse" and Milne's "Binker," Dr. Harriman says. More older persons indulge in this phantasy than has hitherto been suspected.

Real playmates usually cause the gradual disappearance of these phantom associates, but occasionally they go with the child through high school and even into adult life.

Among college students who reported long continuation of the phantasy companion, some had created an individual of the hero type with whom they competed in athletic sports or in class or extra-curricular activity.

"Another man student reports that his imaginary companion came into existence when he was 12 or 13," said Dr. Harriman. "The companion was a beautiful girl with a romantic name of Marie Van Arsdale. At 14 years of age he saw Sari Maritza in the motion pictures and then forsook Marie for her. He made believe that he rescued Sari from savages, and then he built a stone fortress for her. This edifice still stands on a wooded knoll behind his home."

"Somewhat concerned by teachers' reports of inattention in high school, his parents presented him with an automobile. This new possession opened up interests in the world of reality, and he ceased to divert himself with an imaginary loved one."

Since the students who reported clinging to such imaginary companions were all superior in college English, it is tempting to conjecture a relationship between such imaginative play and creative ability in writing, Dr. Harriman suggests. No little inspiration for narrative prose and poetry may come from dalliance with an imaginary associate.

"In none of the individuals who supplied data for this report was there the slightest evidence that any evident harm had resulted from this phantasy," declared Dr. Harriman.

Science News Letter, August 7, 1937

BOTANY-PHYSIOLOGY

Don't Blame the Goldenrod

**Most Likely It Is the Unsightly, But Innocent
Appearing Ragweed That Causes the So-Called Hayfever**

By DR. FRANK THONE

GOLDENROD flaunts its blonde beauty along every roadside.

Hayfever sufferers crash into a crescendo of sneezes.

Through red-rimmed eyes they glare bleakly at the jocund weed, with heaving lungs they vent on it their most explosive curses.

They do themselves, as well as the innocent goldenrod, a most grievous wrong. For in fastening the blame on a blameless plant they are permitting the real culprits, the ragweeds, to escape unindicted.

It is the same way, too, with those whose hayfever smites them in spring. Roses are in bloom then, so they are very likely to call their affliction "rose fever," instead of placing the responsibility where it really belongs, on various kinds of grasses, a few species of trees, and especially the villainous low-lying narrow-leaved plantain.

Folk who blame goldenrod and roses for their hayfever are victims not only of the sneezing scourge, but of their own bad logic.

They perceive a certain effect: in the present instance, painful sneezing.

They look about for a possible cause. They see certain bright flowers, that came into bloom about the time the sneezes started.

They jump to the conclusion that the flowers caused the sneezes.

Philosophers have a name for it. They call it the argument "*post hoc ergo propter hoc*." That Latin means, "following it, therefore because of it."

Not Rare

Folklore is full of such cockeyed reasoning. There is a thunderstorm. Afterwards you find the milk sour. Therefore the thunder soured the milk. Or: you leave your windows open at night, and the night air comes in through them. Afterwards you have malaria. Therefore the night air is bad and unhealthful.

The very name malaria is a monument to this poor guess, for it is a combination of two Italian words that mean bad air—*mal aria*.

Hayfever's own name is another monument to similar loose *post hoc* reasoning. Farmers began cutting their hay. You began to sneeze furiously, and felt a little feverish. The hay must cause the malady; hence "hayfever."

Scientific reasoners have nothing more than such coincidences of events to start with. They differ from the jumpers-at-conclusions, however, in that they are not satisfied with the first of such coincidences as being causally connected. They hunt out all of them they can find, and test them one by one until the false connections are discovered and discarded and the true connections made evident. Then, they say, they have found the cause, or causes.

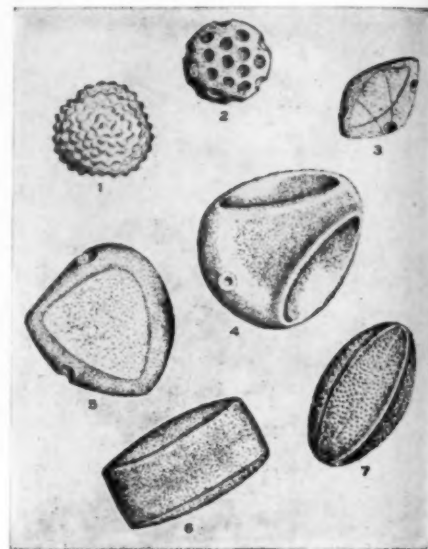
Thus, it was simple to put screens over the windows open to the "bad" night air. The air came in, but you didn't get malaria after all. Apparently night air wasn't guilty. Further search disclosed mosquitoes, not the air, as the carriers of the chills-and-fever illness.

Fantastic Theories

More complicated and difficult was the search for the cause of hayfever. Multi-form and fantastic were the guessed-at causes: hot weather, bright sunlight, the moon, thunderstorms, dust (that one came fairly close!), the aforementioned falsely accused hay and bright flowers. Equally weird were the efforts at cure: bicycle riding, carrying an umbrella, living on top of a high building, snuffing alum and other stringents up your nose.

Slowly, often in the face of ridicule, the hayfever fighters sought the stronghold of the enemy, studied the strategy of attack, considered means of defense or avoidance. Some of the experiments, in which the experimenter used himself as his own guinea pig, were heroic to say the least. But it was established to the conviction of practically everybody that most hayfever is due to pollens, and that pollens of just a few weed species are responsible for the great bulk of all cases.

A scattering few persons can get hayfever from any of several scores of different pollen types—oak, corn, hemp, sagebrush, etc. But the "run-of-the-clinic" hayfever patient has a nose that is out-



HOW IT LOOKS

These are pollen granules, very highly magnified. 1. Common Ragweed. 2. Russian thistle. 3. Hemp. 4. Corn. 5. Hickory. 6. Oak. 7. Sagebrush. (From Durham's "Your Hay Fever")

raged by one of the two abundant species of ragweed. Or, if he begins his season of misery in late spring or early summer, the tests will show up narrow-leaved plantain or one of five or six kinds of grass as the culprit. This handful of species take care of more than nine-tenths of the hayfever business.

But why should just these few plants, out of all the many hundreds of species that clothe the landscape, be the principal provokers of sneezes and smarting, watery eyes?

Great Amounts

The answer lies partly in the inherent viciousness of their pollens, but more in the enormous quantities of it they produce. Without exception, the most active pollens come from plants that depend on wind rather than insects to distribute it to other flowers for the production of seed. Wind-borne pollen is always light and dry and far more abundant than insect-borne pollen.

Necessarily so, for the bee or moth smells and sees its way straight to the next flower, so a little pollen will meet requirements for propagation of the species. But pollen shed into the air, to drift on the blind wind until chance brings it into contact with another



PROTECTED

In a room with filtered air, passed through the cabinet under the window, young hayfever victims forget to sneeze.

flower, must needs be produced (and wasted) in tremendous quantities. That is why millions of grains of ragweed pollen come to your suffering nose, while of the heavy, sticky pollen that comes in goldenrod flowers you can't get so much as a grain unless you deliberately shake a bunch of goldenrod, with your face buried in it. And even then, you'd be more than likely to shake loose some ragweed pollen that had drifted onto its leaves and stems, and thus get a second-hand ragweed sneeze after all.

Modest Blooms

Most of us have grown up with a rather vaguely formed idea that a flower has to have bright petals to be a flower at all. It is perfectly natural to feel that way about it, for the first flowers we come to know as children are the bright and conspicuous ones. However, only the flowers that depend on insect pollination are showy; their shining petals are signboards to the bees: Nectar on Tap Here. Wind-pollinated flowers as a class have no petals or colored parts of any kind, only stamens to shed the superabundant pollen and pistils to receive a tiny part of it and develop the seeds.

The male or pollen-producing flowers of the ragweeds are in tall spikes at the ends of the branches. Every plant has thousands of them. Shaken by the wind,

they shed the yellow dust in clouds, to drift down the air sometimes for many miles. You don't need to be anywhere near a ragweed patch to get a sneeze-starting dose of pollen. If you are on the Empire State Building tower, ragweed pollen from over the river in New Jersey can reach you easily.

There are several species of ragweed, but the two most abundant are the tall or giant ragweed, also called horseweed, and the low ragweed. The tall species likes moist, rich soil, and is most abundant in neglected fields, on river bottoms, on the wastelands among railroad tracks, and around city dumps. It is a big, lusty weed, with broad, rough, three-lobed leaves, and it reaches a height of from eight to twelve feet.

Low Type

The low ragweed, also known as hogweed and bitterweed, runs riot over worn-out pastures and stands thick among ill-plowed corn. It can get along in drier situations than the tall ragweed likes. It grows from knee-high to waist-high, and tends to be bushier than its giant cousin. Its leaves are finely divided, rather like carrot leaves, except that they also are rather rough-surfaced.

Both ragweeds come into flower just about the time that the goldenrods bloom. And since we can't help seeing the goldenrod and usually don't notice

the green flowers of the ragweeds, we hastily blame the goldenrod.

Botanically the ragweeds are members of a very large family, which includes such diverse plants as goldenrod, aster, sunflower, dandelion, lettuce, thistle, chrysanthemum, dahlia, and cocklebur. The scientific name of the ragweeds is an ironic mistake: *Ambrosia*. Tournefort, the early French botanist who named it, never saw it alive but had only pressed specimens from America—for ragweed does not grow in Europe. If he had got some of its pollen up his fine French nose he might not have been so complimentary.

So much for ragweed, and how it gets in its vicious work.

What to do about it?

The easiest thing, and the most effective, is to run away. Mountainous country, and the Far West generally, have no ragweed, and have long been the refuge of hayfever victims who have money and time enough to afford this escape. To be sure, there are other pollen-shedding plants where the ragweeds are not; but the action of pollens is specific: you may sneeze for ragweed but not for grasses, or for grasses and not for ragweed. So usually the fugitives from ragweed find surcease from sneezing if they get far enough away.

Safety at Home

For those who cannot get away to a ragweedless haven, it is sometimes possible to set up air-filtering systems that take the pollen out of all air admitted to a room or even a whole house. But such de-pollenizing plants also cost money. And every other opening to the room must be good and tight, lest an unauthorized draft bring in the dreaded pollen.

Most popular, and most convenient for those who have to go about their daily occupations, sneezes or no sneezes, are the treatments with pollen extracts. This is a trick borrowed from the bacteriologist's bag. Ripe ragweed is harvested by hardy souls lucky enough to be immune to hayfever. The pollen is permitted to drop out of the flowers on to sheets of paper in a draftless room. It is treated chemically to extract the poisonous protein that causes all the trouble.

The patient is tested by the hayfever specialist, with various types of pollen and other substances, to find the particular thing that sets him to sneezing and suffering from other hayfever symptoms. Then he is treated with graduated doses of the pollen extracts, which cause

his body to develop resistance to the pollen proteins very much as vaccines or serums provoke resistance to specific disease germs.

There are several well-known manufacturing laboratories that produce these extracts for the use of physicians. They maintain not only the regular working staff members for the manufacture of the extracts, but also support research specialists in immunology and botany, who are constantly at work to increase knowledge of the plants that produce the pollens and human reactions to their poisonous effects. In a relatively short period, as the development of medicine goes, they have contributed much to make life easier for the hapless victims of hayfever.

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Science News Letter, August 7, 1937

SEISMOLOGY

Earthquake Is Located In Gulf of Mexico

A SEVERE earthquake was centered in the Gulf of Mexico about 30 miles northeast of Vera Cruz on Sunday, July 25. Reports to Science Service from leading seismological observatories allowed U. S. Coast and Geodetic Survey experts to determine the quake's location.

Reports were received from Georgetown University, Weston College, Dominion Meteorological Observatory at Victoria, B. C., University of California, Fordham University, Seismological Observatory at Pasadena, Coast and Geodetic Survey at Ukiah, Calif., and Tucson, Ariz., Dominion Observatory at Ottawa. (Epicenter at 19.5 N 96 W. Time: 10:47.2 p. m. EST, Sunday, July 25.)

Science News Letter, August 7, 1937

For success in transplanting ornamental trees, a scientist recommends that as much soil as practicable should be taken undisturbed with the roots.

SEASICKNESS

Why Bring That Up?

By Dr. Joseph Franklin Montague

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SEASICKNESS



HUNTING ICE AGE MAN

With scientific precision WPA workers hunt hopefully for Ice Age man on Abbott Farm, New Jersey. Thousands of later Indian relics have come to light, as shown in foreground, where an earth block has been isolated because it contains a clay jar. Workers record depth of the jar in earth and will dig it out with trowels and fine implements. See page 86 for story.

MEDICINE

Earhart Plane Loss Stays Collection of Micro-Organisms

AMONG the scientific experiments under way on the world-girdling flight of Amelia Earhart and Capt. Fred Noonan was one involving the collection of micro-organisms from the air, it has been revealed by Fred C. Meier, chairman of the National Research Council's Committee on Aerial Dissemination of Pathogens and Allergens. The objective of this committee is the charting and recording of the manner in which harmful organisms and material which produce allergy are transmitted. The equipment carried on the Earhart plane was of the type developed by Col. Charles A. Lindbergh and used by him in 1933 on the North Atlantic and Greenland flight with Mrs. Lindbergh.

"Miss Earhart, in this phase of her research program, was utilizing the airplane to advance knowledge in a field opened by Louis Pasteur in classical experiments which he reported in 1860 and which were followed up by medical men and botanists of many countries during the 19th and 20th centuries," said

Mr. Meier. "Results of such studies of the upper air bring to light fundamental principles of the spread of microscopic organisms by winds. Better knowledge of these principles leads to many practical applications, perhaps the most important of which are improved measures for control of diseases of plants and animals," he continued.

Since the Lindbergh flight of 1933, the "sky hook" has been standard equipment for these investigations. It was carried on the 1934 Alaskan expedition of the Army bombers, and by Mr. Meier on flights over practically all sections of the United States. With the aid of Pan American Airways, the instrument was used to bring together valuable information concerning content of the air over the Caribbean Sea. Major Albert W. Stevens carried specially designed equipment for making similar collections on his record breaking flight in the National Geographic-Army Air Corps stratosphere balloon, Explorer II.

From Java, in a telephone conversa-

tion with her husband, George Palmer Putnam, Miss Earhart reported making systematic aerial collections and notes on her equatorial flight. "Such a series of collections," said Mr. Meier, "taken with-

in a relatively short space of time from the air over the vast bodies of water distributed around the earth's circumference would be an invaluable contribution to our knowledge in this field."

Science News Letter, August 7, 1937

MATHEMATICS

Are You Buying a Car or Home? Then Think Mathematically

Many Involved Heavily in Installment Payments Are Unable to Figure the Interest They Are Charged

MATHEMATICS touches the life of everyone in the nation. The common thinking that mathematics is for the Prof. Albert Einsteins and other mathematicians of the world is costing the average man dollars each year in his purchases of a home, automobile or other things on the installment plan.

This is the warning issued in an interview by Dr. E. R. Hedrick, the well-known mathematician, now vice-president of the University of California at Los Angeles and formerly of Harvard University.

Most people have a dim realization that mathematics is somehow behind many of the marvels which the physical sciences and engineering have created: airplanes, radio, great bridges and the automobile.

The glorified uses of mathematics to these ends, says Dr. Hedrick, may perhaps blind one to the more humble uses it has in the life of everyone, everywhere.

"Buying things on the installment plan," notes Dr. Hedrick, "ranges all the way from the purchase of a radio to buying a house. It brings with it instantly the question of interest charges on money.

"If a purchase of \$100 involves the payment of five dollars down and five dollars a month for 22 months, few people can figure the rate of interest paid. Yet a reasonable understanding of such interest charges is within the power of every high school graduate.

Waive Tiresome Thought

"People are too prone to waive what seems to be tiresome thought and to accept vague statements in place of exact knowledge; many who are deeply involved in such installment pay-

ments do not know the interest rates that they are actually paying. I think they should know.

"Mathematical thinking really is the difference between having vague generalities and precise information. In the simple instance of automobile driving even a child knows that gasoline makes cars run. A beginning in mathematics has been made when one asks how many miles the car will go on a gallon of gasoline. The answer replaces qualitative information with quantitative fact and the moment this happens, mathematics begins to function.

"The next stage in mathematics rises," continued Dr. Hedrick, "when one realizes that a gallon of gasoline will carry the car different distances if the speed of the car changes. If this question is thought out, maybe by actual trial, one may find a best speed for economy in driving. Thus arises a prime mathematical thought: that there is a *best speed*. Such thinking is a simple instance of the idea of best performance in hosts of cases. Such ideas are present in many human problems, public and private.

For Good Citizenship

"The youth of the country should be given all the training that is possible in ways of mathematical thinking, not alone for their own sakes, but also for the best interest of society as a whole. To make good citizens, to vote intelligently, we should train young people not in vague generalities, but rather to think intelligently in quantities—at least to know that there are best solutions to most public and private problems that involve quantities.

"To say that accurate ways of thinking about quantities is not needed by the mass of the people seems to me to

● RADIO

August 10, 4:15 p. m., E.S.T.

THOSE ANTS—Dr. James Forbes of Fordham University.

August 17, 4:15 p. m., E.S.T.

WONDERS OF THE HEAVENS—Dr. F. R. Moulton, noted astronomer.

In the Science Service series of radio discussions over the Columbia Broadcasting System.

be foolish," said Dr. Hedrick in concluding. "To eliminate mathematical thinking from the training of our youth not only endangers their own lives and closes the door to them for comprehension of the achievements of modern science and engineering; it also endangers the safety of the nation whose public problems cannot be solved by an electorate incapable of mathematical thinking."

Science News Letter, August 7, 1937

AGRICULTURE

Blue Grama Grass Can Now Be Seeded Cheaply

BLUE grama grass, native species of especial value for restoring the old cattle range and preventing dust storms, can be seeded now at a fraction of its one-time estimated cost through machine methods of stripping, threshing, and cleaning seed from stands still on the Plains. Workers of the U. S. Department of Agriculture have been able to obtain seed of a high percentage of purity at 79 cents a pound, while seed with a larger admixture of alien seeds could be produced at 19 cents a pound.

Science News Letter, August 7, 1937

The SEX TECHNIQUE IN MARRIAGE • By I. E. Hutton, M. D.



"Dr. Ira Wile describes the book as a clear, succinct, non-emotional, authoritative and conservative exposition of the practical factors involved in making marriage successful on the sexual level. That describes the book exactly . . . It is primarily concerned with the conduct of the honeymoon and with the technique of the sexual performance."

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ENTOMOLOGY-BIOGRAPHY

Pioneer Naturalist Honored
On 150th Anniversary

THOMAS SAY, noted American naturalist and an authority on insects, was honored in ceremonies dedicated to the 150th anniversary of his birth at the Academy of Natural Sciences of Philadelphia, which he helped to found in 1812.

As a naturalist Thomas Say was the first to describe the malarial mosquito, said the Mayor of Philadelphia, S. Davis Wilson, in the commemorative address. Say's many other works on insects make fitting the title sometimes applied to him—"Father of American Entomology."

Say was born in Philadelphia July 27, 1787 and died in New Harmony, Indiana, an idealized communal colony, on October 10, 1834.

Besides insects Thomas Say was interested in, and made advances of knowledge in the study of conchology (shells) and edited *The American Conchology*, a journal devoted to this field. Also as an editor he prepared for publication the volumes on American ornithology by Charles Bonaparte.

Under his own name Thomas Say published *American Entomology*, which featured many colored plates of insects.

As an explorer, Say collected on the sea islands off the coast of Georgia and in eastern Florida. Twice he went into what was then the far west for the United States government collecting large amounts of material. He also made one trip to Mexico with the great geologist, William Maclure, accompanied by bodyguards and much formality.

Thomas Say fought in the war of 1812 as a member of the first city troop of Philadelphia.

Science News Letter, August 7, 1937



Friends or Foes?

MUSKRATS can be counted man's friends or foes on a basis almost purely geographical. In the natural marsh areas where they thrive best, as along the shores of Maryland and Louisiana, and in some lake-dotted interior states like Minnesota, the little animals are valuable sources of fur and at least secondary sources of meat. Their skins sell at \$1.25 to \$2.00 or more depending on quality, and their flesh finds a ready market, in some cities at least, as "marsh rabbit." Owners of marshland protect and encourage them—even establish muskrat "farms" and pay high prices for select breeding pairs.

Against them may be scored their often pernicious activity in burrowing into embankments along streams and canals, loosing ruinous floods and interfering with navigation. Introduced into central Europe some decades ago, muskrats have proved themselves about the most unpopular of all American visitors. They have made themselves altogether too much at home, and promise to stay

altogether too long. So bad has been the experience of Germany and other Continental countries that when a few hundred muskrats were discovered in Scotland and England some years ago, Parliament appropriated 25,000 pounds for their eradication with hardly a word of argument.

The Central European muskrats do not offer any redeeming features at all. Their fur is reported to be greatly inferior to American muskrat pelts in quality, and apparently the people have not yet learned that their flesh is good to eat—indeed one of the most palatable of all game meats. Vernon Bailey, veteran American mammalogist, states that while muskrat meat is in high demand on the Baltimore market, he found Louisianians quite ignorant of its tooth-someness. So the unwilling European host of our emigrated muskrats may have to be educated up to their possible table value.

Two things militate against the ready use of muskrats as food. Most of us, of whatever race, don't like rats, and the very idea of eating a rat is repugnant to us. This works an injustice to the muskrat, because he is not really a rat. Some rodents we eat very willingly, like rabbits and squirrels. Hence the "marsh-rabbit" masquerade. A ready German translation suggests itself: *Sumpfhaase*.

The second possible difficulty lies in the muskrat's scent glands. If these are cut or broken in skinning the animal, the flavor of the meat is ruined. But if they are properly removed (and it doesn't require much skill for that) they leave the flesh in prime condition, ready to progress through the kitchen to a triumph in the dining-room.

Science News Letter, August 7, 1937

Since the ultraviolet rays in sunlight are especially harmful to old documents, paintings, and textiles, exhibit halls frequently are provided with window glass excluding these rays and with special electric bulbs for artificial lighting.

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Which Brands Are Best Buys?

Consumers Union Reports for July give you unbiased judgments of experts on the products below—in most cases with ratings as "Best Buys," "Also Acceptable," and "Not Acceptable" based on laboratory and use tests.



Miniature Cameras

WHICH IS BETTER—
LEICA OR CONTAX?

Camera experts report on the comparative quality of over 40 leading makes of American and foreign made miniature cameras—including Leica, Contax, Rollei-flex, Eastman Bantam Special, Korelle, National Graflex, Argus and Retina.

Electric Fans

Tests of 22 models show marked differences in efficiency between apparently similar fans. Only one is rated a "Best Buy."



Golf Balls

THERE'S A 30-YARD
DIFFERENCE

between the yardage you can get from one of the good balls in this test and one of the poor ones. Sixteen brands are rated.



Summer Gasolines

SAVING
1 to 4c
ON EACH GALLON

Sixty-seven samples from the East, South, Mid-West, and West, including Esso, Sinclair, Tydol, Co-op, and Shell, were tested this year. Savings of from one to four cents a gallon can be made on some of the "Best Buys."

Sunburn Preventives

SOME WORK-SOME DON'T

CU's tests of sun oils, lotions, and creams disclosed only one that gave complete protection, three that gave reliable partial protection, five that were fair, and fourteen that were "Not Acceptable."

Bathing Suits

Seven women's and seven men's models were tested. The most expensive suit tested had very poor colorfastness to sunlight. The cheapest suit tested had the best colorfastness to sunlight.

Tennis Balls AND RACKETS

A Popular Ball Was Poorest
Leading brands of balls, rackets, and strings are rated as "Best Buys," "Also Acceptable," and "Not Acceptable." American-made balls compare very poorly with the best English products.

COMING IN THE AUGUST ISSUE

REPORTS ON
REFRIGERATORS
INNER TUBES
PHOTOGRAPHIC
FILMS,
EXPOSURE
METERS, etc.
RAINCOATS



Start WITH ANY OF THESE ISSUES—

- () SEPT.—Shoes, Tires, Whiskies.
- () OCT.—Dentifrices, Electric Razors, Gins.
- () NOV.—Radios, Wines, Children's Shoes.
- () DEC.—Vacuum Cleaners, Fountain Pens, Blankets.
- () JAN.-FEB.—Men's Suits, Cold Remedies, Shaving Creams.
- () MAR.—Autos, Face Powders, Flour.
- () APRIL—Shirts, Cold Creams, Gardening.
- () MAY—Trailers, Washing Machines, and the first of a series of articles on the causes and treatment of constipation.
- () JUNE—Large Cameras, Radio Tubes, House Dresses, Sanitary Napkins.



MECHANICAL Refrigerators

Ratings of 1937 Models

Westinghouse, Coldspot, Ward's, Leonard, and Crosley models are rated in this issue on the basis of performance tests. The August issue of the Reports will carry information, including ratings, on a number of other makes.



Motor Oils

CHEAP OILS ARE
"BEST BUYS"

Summer oils from 13 to 20 cents a quart are rated as "Best Buys." Several 25 and 35-cent oils are rated "Not Acceptable." Penn-Rad, New Texaco, Atlantic, Mobiloil, and Essolube included in tests.

Ice Boxes

Fifteen models rated. Recent models show great improvement over ice boxes of past years.

Constipation

The third of a series of articles. This one deals with "auto-intoxication" and other symptoms usually associated with constipation.

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•First Glances at New Books

Medicine

HEMOPHILIA: CLINICAL AND GENETIC ASPECTS—Carroll LaFleur Birch—*Univ. of Illinois*, 151 p., illus., \$2. A technical monograph for physicians and medical students. It is not intended as a complete review of the subject but gives chiefly the author's experiences with 98 patients seen during a period of nine years.

Science News Letter, August 7, 1937

Pharmacy

TEXTBOOK OF PHARMACEUTICAL ARITHMETIC (2d ed.)—Theodore J. Bradley—*Lea & Febiger*, 199 p., \$2.25.

Science News Letter, August 7, 1937

Ethnology

FOX MISCELLANY—Truman Michelson *Govt. Print. Off.*, 124 p., 25 c. Indian legends, one given in Indian text as well as the English translation, are grouped in this Bureau of Ethnology publication.

Science News Letter, August 7, 1937

Anthropology

THE ETHNOGRAPHY OF THE TANAINA—Cornelius Osgood—*Yale Univ.*, 229 p., illus., \$3. A study of Athapaskan-speaking Indians of the south coast of Alaska.

Science News Letter, August 7, 1937

Highway Engineering

REPORT OF THE JOINT COMMITTEE ON ROADSIDE DEVELOPMENT OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS AND THE HIGHWAY RESEARCH BOARD, 1936—*Highway Research Board*, 86 p., 25 c. For garden clubs, civic organizations, landscape engineers and all who are interested in restoring natural beauty along the highways.

Science News Letter, August 7, 1937

Obstetrics

CHILDBIRTH: YESTERDAY AND TODAY: THE STORY OF CHILDBIRTH THROUGH THE AGES, TO THE PRESENT—A. J. Ronzy—*Emerson*, 192 p., illus., \$2. This history of obstetrics includes a chapter on birth control and maternal mortality.

Science News Letter, August 7, 1937

Education

EDUCATION IN A DEMOCRACY: AN INTRODUCTION TO THE STUDY OF EDUCATION—Alonzo F. Myers and Clarence O. Williams—*Prentice-Hall*, 434 p., \$3. A textbook in which education is given a broad interpretation not confined to the schools and attention is given to educational implications of contemporary social, economic and political problems.

The authors are from New York University and Pennsylvania State College.

Science News Letter, August 7, 1937

Public Health

SHADOW ON THE LAND: SYPHILIS—Thomas Parran—*Reynal & Hitchcock*, 309 p., illus., \$2.50. See p. 84.

Science News Letter, August 7, 1937

Engineering—Biography

RICHARD COCKBURN MACLAURIN: PRESIDENT OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 1909-1920—Henry Greenleaf Pearson—*Macmillan*, 302 p., illus., \$3. Intwined with the life of the subject of this biography is the rebirth of a great institution and the amazing story of the eight-year secret of the identity of the "Mr. Smith" who gave millions to M. I. T.

Science News Letter, August 7, 1937

Economics

A PROGRAM OF FINANCIAL RESEARCH. VOL. I: REPORT OF THE EXPLORATORY COMMITTEE ON FINANCIAL RESEARCH OF THE NATIONAL BUREAU OF ECONOMIC RESEARCH, 81 p., \$1. VOL. II: INVENTORY OF CURRENT RESEARCH ON FINANCIAL PROBLEMS, 253 p., \$1.50—*National Bureau of Economic Research*.

Science News Letter, August 7, 1937

Archaeology

THE ANNUAL OF THE AMERICAN SCHOOLS OF ORIENTAL RESEARCH: VOL. XVI, FOR 1935-36—Millar Burrows and E. A. Speiser, eds.—*American Schools of Oriental Research*, 168 p., \$2.50. One hundred new selected Nuzi texts are chosen for presentation. The documents are transliterated from cuneiform into our own type by Dr. Robert H. Pfeiffer, and translated into English by Dr. E. A. Speiser, with comments.

Science News Letter, August 7, 1937

Technology

TECHNOLOGICAL TRENDS AND NATIONAL POLICY, INCLUDING THE SOCIAL IMPLICATIONS OF NEW INVENTIONS—*National Resources Comm., Govt. Print. Off.* 388 p., \$1. See SNL, July 31.

Science News Letter, August 7, 1937

Hygiene

HEALTH AND GROWING UP—Theresa Dansill—*Sanborn*, 127 p., illus., 72c. An attractive-looking health reader for primary grades.

Science News Letter, August 7, 1937

Archaeology

PREHISTORIC ROCK PICTURES IN EUROPE AND AFRICA—Leo Frobenius and Douglas C. Fox—*Museum of Modern Art*—79 p., illus., \$1.85. Guide books to European art galleries have been written; now an introductory guide to the art of Stone Age man has been prepared. Prof. Frobenius, long a student of prehistoric art, tells something of his theories, and Douglas Fox takes the reader on a tour of prehistoric galleries, with many illustrations to point his explanations.

Science News Letter, August 7, 1937

Medicine

EVERYDAY FIRST AID—Walter Frank Cobb—*Appleton-Century*, 269 p., \$1.50. Dr. Cobb uses the novel device of opening each chapter with a newspaper account of an actual accident, one of those hundreds of thousands of accidents that occur every year in homes, on the streets, at work and play. In each case he shows what first aid was applied, what should have been done and why. This device makes the book more readable than a first aid handbook, while the information is just as sound.

Science News Letter, August 7, 1937

Medicine

PUBLIC MEDICAL SERVICES: A SURVEY OF TAX-SUPPORTED MEDICAL CARE IN THE UNITED STATES—Michael M. Davis—*Univ. of Chicago*, 170 p., \$1.50.

Science News Letter, August 7, 1937

Animal Nutrition

MINERAL NUTRITION OF FARM ANIMALS—H. H. Mitchell and F. J. McClure—*National Research Council*, 135 p., \$1. A simply tremendous mass of literature (571 titles cited!) has been worked to yield this highly concentrated ration of information, valuable alike to physiologists, agricultural scientists of all disciplines, and practical biologists generally.

Science News Letter, August 7, 1937

Hygiene

SEX LIFE IN MARRIAGE—Oliver M. Butterfield—*Emerson*, 192 p., \$2. A simple, practical guide written by a former minister who since 1929 has devoted his time to marriage counseling. The author prepared himself thoroughly for his new role and this book is in line with modern sociological, psychological and medical thought on the subject.

Science News Letter, August 7, 1937